

REMARKS

The present application has been reviewed in light of the Office Action dated May 6, 2010, and the Advisory Action dated August 23, 2010. Claims 1-17 are presented for examination, of which Claims 1 and 15 are in independent form. Claims 18-20 have been withdrawn from consideration. Claims 1-17 have been amended to define aspects of Applicants' invention more clearly. Favorable consideration is requested.

The Office Action stated that Claims 1-9 and 11-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,126,445 (*Willoughby*), in view of U.S. Patent No. 6,398,554 (*Perot et al.*); and that Claim 10 is rejected under § 103(a) as being unpatentable over *Willoughby* in view of *Perot et al.*, and further in view of U.S. Patent No. 6,968,247 (*Rathke et al.*).

The continuation sheet attached to the Advisory Action stated that the Request for Reconsideration, filed August 6, 2010, does not place the application in condition for allowance because:

The Applicant argues that Perot does not disclose separating the digital data into a 1st and 2nd elements and then fabricating the two elements based on the digital data. However, [sic] the examiner disagrees. Perot teaches that the data are of two separate elements (i.e. a cap and a crown) and the separate data are then manipulated in order to form desired fit (column 4, lines 59-65). The motivation [sic] to combine is given [in] the previous office action. The applicant argues that Perot does not disclose separating the two elements from a dental superstructure since Perot discloses a digital data representing a fitting cap and a crown. However, it is the examiner's position that these elements meets [sic] the limitation of the broad term "superstructure." If the applicant is trying to claim a specific piece of the implant, then such pieces must be positively cited in the claims.

Applicants still strongly believe that the claims presented prior to the present Preliminary Amendment, are patentable for the reasons set forth in the Request for Reconsideration. Nonetheless, without conceding the propriety of the above rejections, and merely to advance prosecution, the independent claims have been amended to even further clarity that the first digital data represents a shape of the first element to be connected to the implant, and the second digital data represents a shape of the second element to be connected to the first element.

For example, as now amended, Claim 1 recites, in part, that the digital data representing the optimum shape of the dental superstructure is automatically separated into first digital data representing a shape of the first element to be connected to the implant and second digital data representing a shape of the second element to be connected to the first element. The shape of the first element is optimized, at least in part, based on a tilt angle between the determined implant axis and the determined insertion axis. The first and second elements of the superstructure are fabricated from one or more blanks, based on the first digital data and the second digital data, using machining equipment.

By virtue of automatically separating the digital data representing the optimum shape of the dental superstructure into first digital data representing the shape of the first element to be connected to the implant and second digital data representing the shape of the second element to be connected to the first element, wherein the shape of the first element is optimized, at least in part, based on a tilt angle between the determined implant axis and the determined insertion axis, the first element can be fabricated such that it can be mounted in an occlusal

direction along the determined insertion axis, for example¹ (see paragraph 35 of U.S. Patent Application Publication No. 2006/0106484, which corresponds to the present application).

Willoughby is understood to relate to dental implant abutment systems, related devices, implantology processes, and implantology techniques (see col. 1, lines 11-13). However, nothing has been found, or pointed to, in *Willoughby* that is believed to teach or suggest that digital data representing an optimum shape of a dental superstructure is automatically separated into first digital data and second digital data. Moreover, nothing has been found, or pointed to, in *Willoughby* that is believed to teach or suggest that first and second superstructure elements are fabricated based on such first and second digital data.

As pointed out previously, the Office Action conceded that “*Willoughby* fails to teach automatically separating the superstructure into a first element and second element”, but then cited *Perot et al.* as teaching those features at col. 4, lines 59-65. Additionally, as quoted above, the continuation sheet of the Advisory Action argued that *Perot et al.* teaches that the data are of two separate elements (i.e., a cap and crown) and the separate data are then manipulated in order to form a desired fit, and cited col. 4, lines 59-65, as support.

Regarding the section of *Perot et al.* cited by the Examiner, *Perot et al.* discloses merely that:

The process according to the invention also has the advantage of knowing whether, before proceeding with manufacture of the prosthesis, it is possible to produce a prosthesis which satisfies the anatomical requirements of the buccal environment and the mechanical and aesthetic constraints connected with the production of the prosthesis. Thus, as illustrated in FIG. 8, provision may be made to make a digitized representation of the prosthesis 2 on the basis of the digitized representations R₂, R₃, respectively of the external surface of the prosthesis and of the external surface of the cap.

¹ Any examples presented herein are intended for illustrative purposes and are not to be construed to limit the scope of the claims.

(*Perot et al.*, col. 4, line 59, to col. 5, line 2). In this section, *Perot et al.* discloses that the digitized representation R_2 of the external surface of the prosthesis 2 and the digitized representation R_3 of the external surface of the cap can be used to make a digitized representation of the prosthesis 2. In this section, however, *Perot et al.* fails to teach or suggest that digital data representing an optimum shape of the prosthesis 2 is separated into the digitized representation R_2 of the external surface of the prosthesis 2 and the digitized representation R_3 of the external surface of the cap.

Indeed, nothing has been found, or pointed out, in *Perot et al.* (or *Willoughby*), that would teach or suggest automatically separating the digital data representing the optimum shape of the dental superstructure into first digital data representing a shape of the first element to be connected to the implant and second digital data representing a shape of the second element to be connected to the first element, the shape of the first element being optimized, at least in part, based on a tilt angle between the determined implant axis and the determined insertion axis, let alone fabricating the first and second elements from one or more blanks, based on the first digital data and the second digital data, using machining equipment, as recited in Claim 1.

Accordingly, for all the above reasons, Applicants submit that Claim 1 is clearly patentable over *Willoughby* and *Perot et al.* (whether considered separately or in combination), and respectfully request withdrawal of the rejection of Claim 1 under 35 U.S.C. § 103(a).

Independent Claim 15 include features sufficiently similar to those of Claim 1 that Claim 15 is believed to be patentable over *Willoughby* and *Perot et al.*, whether considered separately or in combination, for at least the reasons discussed above.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references

against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other rejected claims in the present application depend from one or another of independent Claims 1 and 15 and are submitted to be patentable for at least the same reasons. Because each dependent claim also is deemed to define an additional aspect of the invention, however, individual consideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable consideration and an early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should be directed to our address listed below.

Respectfully submitted,



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